

EFFECTS OF CHOPPING ON FERMENTATIVE AND NUTRITIONAL TRAITS OF RYEGRASS, KIKUYU, AND REED CANARYGRASS SILAGE

L. Villalobos¹ and J.A. Arce²

Although it is common practice to chop grasses when making silage, producers are interested in reducing labor costs by making silage without chopping. We evaluated the effects of chopping perennial ryegrass (*Lolium perenne* L.), kikuyu (*Kikuyuocloa clandestina*), and reedcanary grass (*Phalaris arundinacea* L.), at 60, 90, or 70 days of regrowth, respectively. Forage was harvested, wilted for 24 hours, and either chopped or unchopped. Molasses (3%) and a farm-made inoculant (0.1%) were mixed for all four microsilos bags filled (1 kg each, 0.063 mm thick) per treatment (4 replicates x 2 treatments x 3 grass species = 24 microsilos). We extracted air with a vacuum and sealed with duct tape. Dry matter differed among grass species and only kikuyu had lower values from chopping (20.9% vs. 23.6%). Protein did not differ among species or treatments, and fiber was affected by grass species (ryegrass 49.6%, reedcanary grass 51.5%, and kikuyu 62.5%). Ryegrass silage was more digestible (63.3%) than reedcanary grass (54.8%) and kikuyu (47.2%). While pH values were higher than 4 for all silages, ammonia content was highest in unchopped ryegrass (6.4%) and lowest in kikuyu (avg. 1.2%). Buffer capacity did not differ among treatment groups in kikuyu grass (avg. 80.1 mEq NaOH.100 g⁻¹ DM), but was lower than in the other two species. Aerobic spoilage was not evident in any of the silos but fermentative traits would likely shorten duration of storage and feed out phases. Differences in nutritional and fermentative traits of silages were attributed to differences among species. We did not find evidence that chopping affected silage quality for the grass species evaluated.

¹Research Center for Animal Nutrition, Department of Animal Science, University of Costa Rica, San José, Costa Rica (luis.villalobosvillalobos@ucr.ac.cr). ²Department of Animal Science, University of Florida (jose.arcecordeiro@ucr.ac.cr)